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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/805,814

03/22/2004

Michael J. Brosnan

10040348-1

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57299 7590 03/08/2007
AVAGO TECHNOLOGIES, LTD.
P.O. BOX 1920
DENVER, CO 80201-1920

EXAMINER

TRAN, MY CHAU T

ART UNIT

PAPER NUMBER

2629

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

03/08/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/805,814

Applicant(s)

BROSNAN ET AL.

Examiner

MY-CHAU T. TRAN

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,11-14 and 18-20 is/are rejected.
- 7) ☒ Claim(s) 3-10 and 15-17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>3/22/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Application and Claims Status

1. Claims 1-20 are currently pending and are under consideration in this Office Action.

Information Disclosure Statement

2. The information disclosure statement (IDS) filed on 03/22/2004 has been reviewed, and the references that have been considered are initialed as recorded in PTO-1449 form.

Specification

3. The disclosure is objected to because of the following informalities: It is noted in the first paragraph applicant has indicated related U.S. patent applications. However, applicant refers to these applications by their Attorney Docket Number. Any reference to U.S. patent application should be refer by their serial number not by their Attorney Docket Number.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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5. Claims 1, 2, and 11-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Piot et al. (US Patent 6,256,016 B1).

For *claim(s) 1 and 2*, Piot et al. disclose an optical detecting system and method that detects movement of the optical detecting system (see e.g. Abstract; col. 4, lines 5-21 and 43-57). The apparatus comprises a coherent light source that is a laser diode (refers to instant claimed light source and instant claim 2) wherein the light source illuminates an imaging surface and generates reflected images, and photosensor array (refers to instant claimed navigation sensor)(see e.g. col. 4, lines 5-21; col. 6, line 66 thru col. 7, line 46; figs. 2 and 3). The photosensor array generates digital images based on the reflected images and movement data based on the movement computation that is indicative of relative motion between the imaging surface and the apparatus, and performing a movement computation based on the digital images (see e.g. col. 8, line 22 thru col. 11, line 54; figs. 4B-4D).

For *claims 11-14*, Piot et al. disclose that the digital images each include a plurality of rows of pixels and a plurality of columns of pixels, and summing pixel values in each row of the digital images and each column of digital images (see e.g. col. 13, line 6 thru col. 14, line 64). The calculation also include correlating the plurality of rows sums from a first one of the digital images with the plurality of row sums from a second one of the digital images, and correlating the plurality of column sums from the first one of the digital images with the plurality of column sums from the second one of the digital images (see e.g. col. 13, line 6 thru col. 14, line 64).

Alternatively, the claimed invention further differs from the prior art teachings only by the recitation of:

For **claim 1**, the limitations that '*the movement data is generated based on movement calculations that have a low sensitivity to image effects caused by particle contamination*' is interpreted as the functional limitation for the instantly navigation sensor. The claimed invention appears to be the same or obvious variations of the reference teachings, absent a showing of unobvious differences. The office does not have the facilities and resources to provide the factual evidence needed in order to determine and/or compare the specific activities of the instant versus the reference navigation sensor. In the absence of evidence to the contrary, the burden is upon the applicant to prove that the claimed composition is different from the one taught by prior art and to establish the patentable differences. See in re Best 562F.2d 1252, 195 USPQ 430 (CCPA 1977) and Ex parte Gray 10 USPQ2d 1922(PTO Bd. Pat. App. & Int. 1989). As a result, the apparatus of Piot et al. would still anticipate the presently claimed apparatus since it meets all the structural limitation of the claimed apparatus of claim 1.

Therefore, the apparatus of Piot et al. does anticipate the instant claimed invention.

6. Claim 20 is rejected under 35 U.S.C. 102(e) as being anticipated by Walley (US Patent 6,770,863 B2).

For **claim 20**, Walley discloses an apparatus for sensing movement (see e.g. Abstract; col. 2, lines 29-39; fig. 5). The apparatus comprises light-sensitive photo-sensors (ref. #548A-548C)(refers to instant claimed sensor array), an analog to digital (A/D) converter (ref. #558), and a correlator (ref. #560)(refers to instant claimed a processor) that include (see e.g. col. 4, line 63 thru col. 5, line 10; col. 5, lines 43-64; fig. 5). The correlator generates movement data based on the digital images (see e.g. col. 5, lines 43-64).

Alternatively, the claimed invention further differs from the prior art teachings only by the recitation of:

For *claim 20*, the limitations that ‘*the movement data is generated based on movement calculations that have a low sensitivity to image effects caused by particle contamination*’ is interpreted as the functional limitation for the instantly processor. The claimed invention appears to be the same or obvious variations of the reference teachings, absent a showing of unobvious differences. The office does not have the facilities and resources to provide the factual evidence needed in order to determine and/or compare the specific activities of the instant versus the reference processor. In the absence of evidence to the contrary, the burden is upon the applicant to prove that the claimed composition is different from the one taught by prior art and to establish the patentable differences. See *in re Best* 562F.2d 1252, 195 USPQ 430 (CCPA 1977) and *Ex parte Gray* 10 USPQ2d 1922(PTO Bd. Pat. App. & Int. 1989). As a result, the apparatus of Walley would still anticipate the presently claimed apparatus since it meets all the structural limitation of the claimed apparatus of claim 20.

Therefore, the apparatus of Walley does anticipate the instant claimed invention.

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re*

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Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 1-3, 18, and 19 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-3 and 20 of copending Application No. 10/795,688 (US Patent Application Publication US 2005/0195163 A1). Although the conflicting claims are not identical, they are not patentably distinct from each other because both the instant claimed apparatus of claims 1-3 and the instant claimed apparatus of claims 1-3 of copending Application No. 10/795,688 have similar structural features. Specifically, the instant claimed apparatus of copending Application No. 10/795,688 comprises a light source for illuminating an imaging surface, thereby generating reflected images wherein the light source include laser light source (refers to instant claim 2) as define in the specification of copending Application No. 10/795,688 (see paragraph [0016]); and a navigation sensor for generating digital images based on the reflected images, detecting defective pixel locations in the digital images, and generating movement data based on the digital images that is indicative of relative motion between the imaging surface and the apparatus. The navigation sensor is configured to a) flag pixel locations that are detected as being defective (refers to instant claim 3), and b) generate the movement data based on a correlation of good pixels from the digital images and not based on pixels in the detected defective pixel locations (refers to instant claimed limitation of

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‘generating movement data based on the digital images that is indicative of relative motion between the imaging surface and the apparatus’). Furthermore, both the instant claimed method of claim 18 and 19 and the instant claimed method of claim 20 of copending Application No. 10/795,688 have similar method steps. Specifically, the instant claimed method of copending Application No. 10/795,688 comprises the steps of a) illuminating an imaging surface, thereby generating reflected images; b) generating digital images based on the reflected images; and c) generating movement data based on the digital images, wherein the movement data is generated based on a correlation of only good pixels from the digital images and not based on pixels in the digital images that are identified as being defective. That is the apparatus and method of the instant application is generic to the apparatus and method of copending Application No. 10/795,688 or in other word claims 1-3, 18, and 19 are anticipated by claims 1-3 and 20 of copending Application No. 10/795,688. Accordingly, the examined claims would be obvious over the claims of copending Application No. 10/795,688.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Allowable Subject Matter

9. Claims 3-10 and 15-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter:

A. The instant claim 3 is allowed for the reason that the cited prior arts do not teach or fairly suggest the presently claimed apparatus wherein *'the navigation sensor is configured to detect defective pixels in the digital images'*.

B. The instant claim 7 is allowed for the reason that the cited prior arts do not teach or fairly suggest the presently claimed apparatus wherein *'the navigation sensor is configured to detect defective pixels in the digital images, and identify a sub-array of pixels within the digital images that do not include any defective pixels'*.

C. Claim 9 is allowed for the reason that the cited prior arts do not teach or fairly suggest the presently claimed apparatus wherein *'the movement computation comprises a correlation of temporal differences in a set of the digital images'*.

D. Claim 15 is allowed for the reason that the cited prior arts do not teach or fairly suggest the presently claimed apparatus wherein *'the navigation sensor is configured to determine if the correlation produces a false correlation peak corresponding to zero displacement caused by defective pixels'*.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MY-CHAU T. TRAN whose telephone number is 571-272-0810. The examiner can normally be reached on Monday: 8:00-2:30; Tuesday-Thursday: 7:30-5:00; Friday: 8:00-3:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard A. Hjerpe can be reached on 571-272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

My-Chau T. Tran
March 5, 2007

 3/5/07
MY-CHAU T. TRAN
PATENT EXAMINER